

THE LANCET

Rheumatology

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed.
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Supplement to: De Luca G, Cavalli G, Campochiaro C, et al. GM-CSF blockade with mavrilimumab in severe COVID-19 pneumonia and systemic hyperinflammation: a single-centre, prospective cohort study. *Lancet Rheumatol* 2020; published online June 16. [https://doi.org/10.1016/S2665-9913\(20\)30170-3](https://doi.org/10.1016/S2665-9913(20)30170-3).

SUPPLEMENTARY MATERIALS

GM-CSF blockade with mavrilimumab in severe COVID-19 pneumonia and systemic hyperinflammation: a single-centre, prospective cohort study

Supplementary Table 1. Comorbidities in patients treated with mavrilimumab and control cohort

| | Mavrilimumab (n=13) | Control cohort (n=26) |
|-------------------------------------|----------------------------|------------------------------|
| Tobacco smoking, n (%) | 2 (15) | 3 (12) |
| Arterial hypertension, n (%) | 6 (46) | 10 (38) |
| CAD, n (%) | 1 (8) | 2 (8) |
| T2DM, n (%) | 1 (8) | 5 (19) |
| COPD, n (%) | 0 (0) | 1 (4) |
| CKD, n (%) | 0 (0) | 0 (0) |
| Dyslipidemia, n (%) | 1 (8) | 2 (8) |
| Previous cancer, n (%) | 2 (15) | 1 (4) |
| Others, n (%) | 4 (31)* | 3 (12)** |
| Obesity, n (%) | 1 (8) | 2(8) |

*n= number; CAD= coronary artery disease (history); T2DM= type 2 diabetes mellitus; COPD= chronic obstructive pulmonary disease; CKD= chronic kidney disease; *chronic thyroiditis, heart valve disease, diabetes insipidus, epilepsy; ** atrial fibrillation, colon diverticulosis, mild chronic encephalopathy, peripheral arterial occlusive disease.*

Supplementary Table 2. Demographics and Baseline Characteristics by Clinical Improvement Status

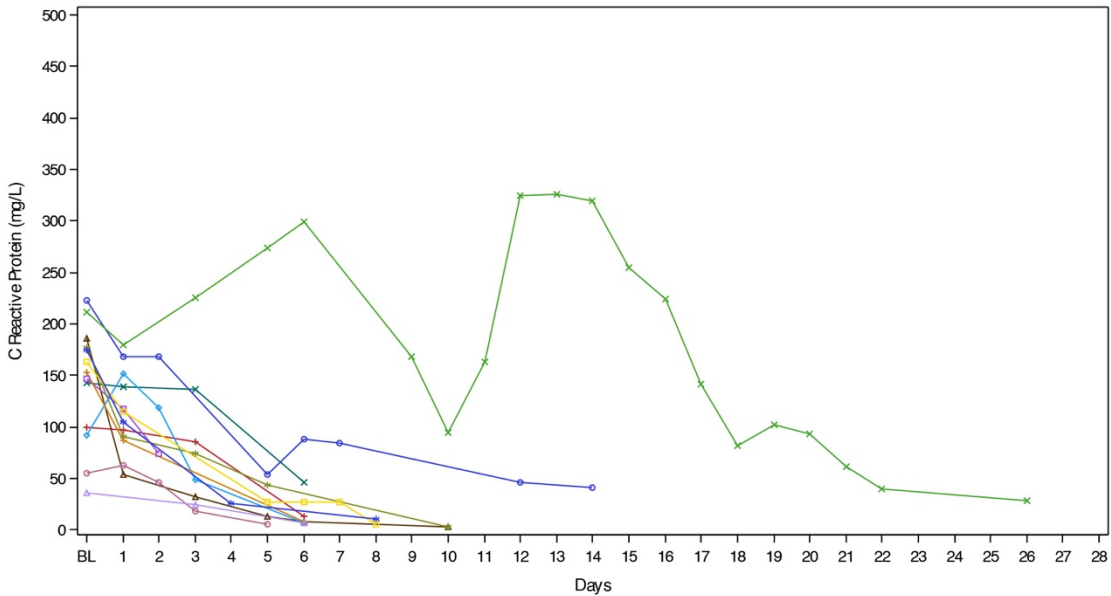
| | Subjects with clinical improvement (N=30) | Subjects without clinical improvement (N=9) |
|---|---|---|
| Age | | |
| n | 30 | 9 |
| Median (IQR) | 57 (52, 62) | 62 (60, 70) |
| Sex (n, %) | | |
| Males | 22 (73) | 7 (78) |
| Females | 8 (27) | 2 (22) |
| P/F ratio | | |
| n | 30 | 9 |
| Median (IQR) | 204 (167, 242) | 161 (124, 242) |
| P/F Ratio Category (n, %) | | |
| P/F 200-<300 | 16 (53) | 4 (44) |
| P/F 100-<200 | 12 (40) | 3 (33) |
| P/F <100 | 2 (7) | 2 (22) |
| Oxygen supplementation (n, %) | | |
| Low-flow oxygen | 13 (43) | 2 (22) |
| High-flow oxygen | 11 (37) | 4 (44) |
| NIV | 6 (20) | 3 (33) |
| Fever at baseline (n, %) | | |
| Yes | 23 (77) | 6 (67) |
| No | 7 (23) | 3 (33) |
| Fever duration (days) before treatment | | |
| n | 23 | 5 |
| Median (IQR) | 10 (6, 12) | 6 (5, 7) |
| CRP (µg/mL) | | |
| n | 30 | 9 |
| Median (IQR) | 145 (77, 186) | 160 (117, 186) |
| LDH (U/L) | | |
| n | 30 | 9 |
| Median (IQR) | 421 (374, 501) | 510 (474, 542) |

| | | |
|--|----------------------------|----------------------------|
| Ferritin (µg/L) | | |
| n | 18 | 2 |
| Median (IQR) | 1540 (943, 2998) | 2675 (479, 4870) |
| 7-point scale (%) | | |
| 4 | 13 (43) | 2 (22) |
| 5 | 17 (57) | 7 (78) |
| Tobacco smoking (n, %) | | |
| Yes | 4 (13) | 1 (11) |
| No | 26 (87) | 8 (89) |
| IL-6 (ng/mL) | | |
| n | 16 | 4 |
| Median (IQR) | 37 (30, 65) | 134 (47, 405) |
| Lymphocyte count (count/mm³) | | |
| n | 30 | 9 |
| Median (IQR) | 1000 (700, 1100) | 800 (700, 1200) |
| Platelet count (count/mm³) | | |
| n | 30 | 9 |
| Median (IQR) | 253 000 (190 000, 302 000) | 178 000 (150 000, 232 000) |

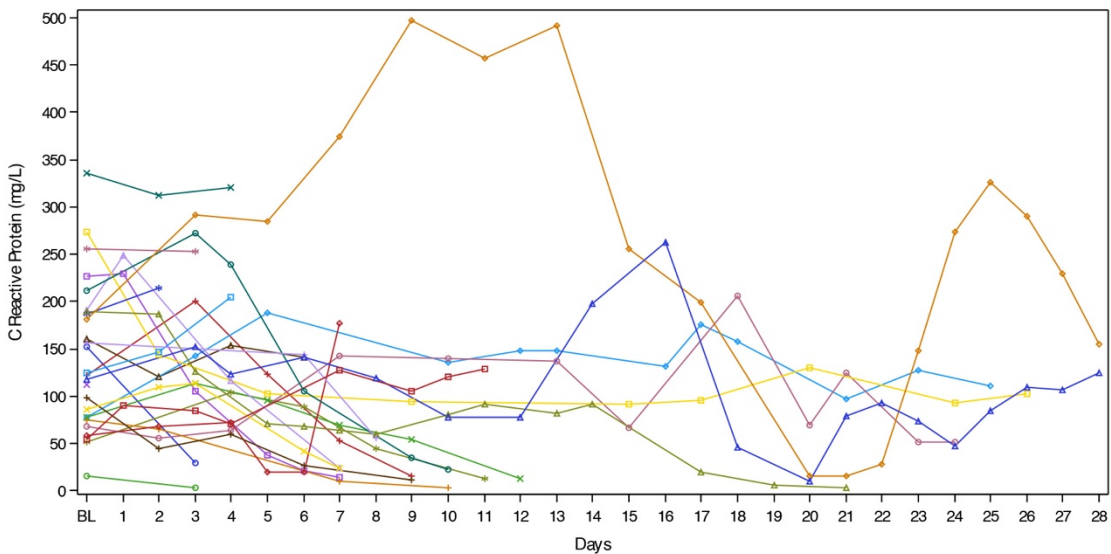
n=number; IQR=interquartile range; P/F ratio: ratio of the partial pressure of oxygen (P_{ao_2}) to the fraction of inspired oxygen (F_{io_2}) in mmHg; NIV= non-invasive ventilation with continuous positive airway pressure; CRP= C-reactive protein serum levels; LDH= lactate dehydrogenase; IL-6= interleukin-6.

Supplementary Figure 1. Changes in C-reactive protein levels

A



B



Before and after graphs show serial measurements of C-reactive protein obtained for patients receiving mavrilimumab (upper panel, A) and for patients receiving standard treatment alone (lower Panel, B) for 28 days, until discharge from hospital, or until death, whichever came first (BL, baseline)